

What is claimed:

1. A method of manufacturing a hydroformed member comprising the steps of:
 - providing a blank defined by a blank wall;
 - placing the blank in a die assembly having a die cavity defined by a die surface;
 - expanding the blank by introducing pressurized fluid into the die cavity to force the blank wall against the die surface and form the hydroformed member;
 - conforming a portion of the blank wall against a wall-thinning element positioned along the die surface to form a removable wall section in a portion of the blank wall; and
 - removing the removable wall section from the blank wall to form an opening in the hydroformed member, wherein the removing step includes striking the removable wall section.
2. A method as set forth in claim 1 wherein the removing step includes striking the removable wall section multiple times.
3. A method as set forth in claim 1 wherein the conforming step includes partially fracturing a portion of the blank wall surrounding the removable wall section.
4. A method of manufacturing a hydroformed member comprising the steps of:
 - providing a blank defined by a blank wall;
 - placing the blank in a die assembly having a die cavity defined by a die surface;
 - expanding the blank to force the blank wall against the die surface and form the hydroformed member;
 - conforming a portion of the blank wall against a wall-thinning element positioned along the die surface to form a removable wall section in a portion of the blank wall;
 - removing the removable wall section from the blank wall to form an opening in the hydroformed member; and

moving the hydroformed member out of the die assembly prior to the step of removing the removable wall section from the blank wall to form the opening in the hydroformed member.

5. A method as set forth in claim 4 wherein the expanding step includes introducing pressurized fluid into the die cavity.

6. A method as set forth in claim 5 wherein the removing step includes striking the removable wall section.

7. A method of manufacturing a hydroformed member with an opening using a blank, having a blank wall and a removable wall section, and a die assembly having a die cavity, a die surface defining the die cavity, and at least one wall-thinning element disposed along a portion of the die surface, the method comprising the steps of:

placing the blank in the die cavity;

expanding the blank by introducing pressurized fluid into the die cavity to force the blank wall against the die surface;

conforming a portion of the blank wall to the wall-thinning element to form the removable wall section; and

removing the removable wall section from the blank wall to form the opening in the hydroformed member, wherein the removing step includes striking the removable wall section.

8. A method as set forth in claim 7 wherein the removing step includes striking the removable wall section multiple times.

9. A method as set forth in claim 7 including the step of moving the hydroformed member out of the die assembly prior to the step of removing the removable wall section from the blank wall to form the opening in the hydroformed member.

CLARK HILL

Fax:313-965-8570

Jan 24 2005 18:35

P.07

10. A method as set forth in claim 7 wherein the conforming step includes partially fracturing a portion of the blank wall surrounding the removable wall section.